SEQUENCE LISTING

<110> Genencor International, Inc.
      Dunn-Coleman, Nigel
      Ward, Michael

<120> BGL6 Beta-Glucosidase and Nucleic Acids
  Encoding the Same

<130> GC781-2-PCT

<140> PCT/US03/35672
<141> 2003-11-07

<150> US 60/424,784
<151> 2002-11-07

<160> 4

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 2812
<212> DNA
<213> Trichoderma reesei

<400> 1

```
gatcacaccc ctcccaccct tctcttttca aggttgtccc cttctcccac ggctttatgt      60
acttcccact ctmtaattcg ctctttccat tccaagccaa gcaacatctg tgagcagctc     120
atccttccca atatgggcga atggcaggag cagatgatgg gttttgacgt ggaggatgtt     180
ctgtctcagc tgagccaaaa tgagaagatt gctctcttgt ccggcattga tttctggcat     240
acttatccca taccaaagta caacgtccct tcagtccgcc taacggacgg tcctaacggc     300
atacgaggca caaagttttt tgctggcatt cctgctgcct gcctgccatg tgggacggcc     360
ctggcctcta cctgggataa gcagctgctg aagaaggctg ggaagctgct cggtgatgag     420
tgcatcgcaa aaggcgccca ctgctggctg ggcccaacaa tcaatactcc ccgatctcct     480
ctggggggc gcggcttcga gtcattttcg gaagatccgt acctgtccgg catccttgct     540
gcatctatga ttctcggctg tgaaagcaca ggtgtcatct ctgccgtcaa acactttgtc     600
gccaacgacc aggagcacga gcggcgagcg gtcgactgtc tcatcaccca gcgggctctc     660
cgggaggtct atctgcgacc cttccagatc gtagcccgag atgcaaggcc cggcgcattg     720
atgacatcct acaacaaggt caatggcaag cacgtcgctg acagcgccga gttccttcag     780
ggcattctcc ggactgagtg gaattgggat cctctcattg tcagcgactg gtacggcacc     840
tacaccacta ttgatgccat caaagccggc cttgatctcg agatgccggg cgtttcacga     900
tatcgcggca aatacatcga gtctgctctg caggcccgtt gctgaagca gtccactatc     960
gatgagcgcg ctcgccgcgt gctcaggttc gcccagaagg ccagccatct caaggtctcc    1020
gaggtagagc aaggccgtga cttcccagag gatcgcgtcc tcaaccgtca gatctgcggc    1080
agcagcattg tcctactgaa gaatgagaac tccatcttac ctctccccaa gtccgtcaag    1140
aaggtcgccc ttgttggatc ccacgtgcgt ctaccggcta tctcgggagg aggcagcgcc    1200
tctcttgtcc cttactatgc catatctcta tacgatgccg tctctgaggt actagccggt    1260
gccacgatca cgcacgaggt cggtgcctat gcccaccaaa tgctgcccgt catcgacgca    1320
atgatcagca acgccgtaat ccacttctac aacgacccca tcgatgtcaa agacagaaag    1380
ctccttggca gtgagaacgt atcgtcgaca tcgttccagc tcatggatta caacaacatc    1440
ccaacgctca acaaggccat gttctggggt actctcgtgg gcgagtttat ccctaccgcc    1500
acgggaattt gggaatttgg cctcagtgtc tttggcactg ccgacctta tattgataat    1560
gagctcgtga ttgaaaatac aacacatcag acgcgtggta ccgcctttt cggaaaggga    1620
acgacggaaa aagtcgctac caggaggatg gtggccggca gcacctacaa gctgcgtctc    1680
gagtttgggt ctgccaacac gaccaagatg gagacgaccg gtgttgtcaa ctttggcggc    1740
```

```
ggtgccgtac acctgggtgc ctgtctcaag gtcgacccac aggagatgat tgcgcgggcc    1800
gtcaaggccg cagccgatgc cgactacacc atcatctgca cgggactcag cggcgagtgg    1860
gagtctgagg gttttgaccg gcctcacatg gacctgcccc ctggtgtgga caccatgatc    1920
tcgcaagttc ttgacgccgc tcccaatgct gtagtcgtca accagtcagg cacccccagtg   1980
acaatgagct gggctcataa agcaaaggcc attgtgcagg cttggtatgg tggtaacgag    2040
acaggccacg gaatctccga tgtgctcttt ggcaacgtca acccgtcggg gaaactctcc    2100
ctatcgtggc cagtcgatgt gaagcacaac ccagcatatc tcaactacgc cagcgttggt    2160
ggacgggtct tgtatggcga ggatgtttac gttggctaca agttctacga caaaacggag    2220
agggaggttc tgtttccttt tgggcatggc ctgtcttacg ctaccttcaa gctcccagat    2280
tctaccgtga ggacggtccc cgaaaccttc cacccggacc agcccacagt agccattgtc    2340
aagatcaaga cacgagcag  tgtcccgggc gcccaggtcc tgcagctata catttcggcc    2400
ccaaactcgc ctacacatcg cccggtcaag gagctgcacg gattcgaaaa ggtgtatctt    2460
gaagctggcg aggagaagga ggtacaaata cccattgacc agtacgctac tagcttctgg    2520
gacgagattg agagcatgtg gaagagcgag aggggcattt atgatgtgct tgtaggattc    2580
tcgagtcagg aaatctcggg caaggggaag ctgattgtgc ctgaaacgcg attctggatg    2640
gggctgtaga ttcaacacgt gagcaaaagc gattgcggaa agtaccagaa aagccaaggg    2700
agtcaaagga tgggaacttg tgtcaataga agatatgcat gatgggcatt tgggatggtg    2760
tttggcatta tgcaagaag  caaagatgga gtgataaaaa aaaaaaaaa  aa           2812
```

<210> 2
<211> 838
<212> PRT
<213> Trichoderma reesei

<400> 2

```
Met Gly Glu Trp Gln Glu Gln Met Met Gly Phe Asp Val Glu Asp Val
  1               5                  10                  15
Leu Ser Gln Leu Ser Gln Asn Glu Lys Ile Ala Leu Leu Ser Gly Ile
             20                  25                  30
Asp Phe Trp His Thr Tyr Pro Ile Pro Lys Tyr Asn Val Pro Ser Val
         35                  40                  45
Arg Leu Thr Asp Gly Pro Asn Gly Ile Arg Gly Thr Lys Phe Phe Ala
     50                  55                  60
Gly Ile Pro Ala Ala Cys Leu Pro Cys Gly Thr Ala Leu Ala Ser Thr
 65                  70                  75                  80
Trp Asp Lys Gln Leu Leu Lys Lys Ala Gly Lys Leu Leu Gly Asp Glu
             85                  90                  95
Cys Ile Ala Lys Gly Ala His Cys Trp Leu Gly Pro Thr Ile Asn Thr
            100                 105                 110
Pro Arg Ser Pro Leu Gly Gly Arg Gly Phe Glu Ser Phe Ser Glu Asp
            115                 120                 125
Pro Tyr Leu Ser Gly Ile Leu Ala Ala Ser Met Ile Leu Gly Cys Glu
            130                 135                 140
Ser Thr Gly Val Ile Ser Ala Val Lys His Phe Val Ala Asn Asp Gln
145                 150                 155                 160
Glu His Glu Arg Arg Ala Val Asp Cys Leu Ile Thr Gln Arg Ala Leu
                165                 170                 175
Arg Glu Val Tyr Leu Arg Pro Phe Gln Ile Val Ala Arg Asp Ala Arg
                180                 185                 190
Pro Gly Ala Leu Met Thr Ser Tyr Asn Lys Val Asn Gly Lys His Val
            195                 200                 205
Ala Asp Ser Ala Glu Phe Leu Gln Gly Ile Leu Arg Thr Glu Trp Asn
            210                 215                 220
Trp Asp Pro Leu Ile Val Ser Asp Trp Tyr Gly Thr Tyr Thr Thr Ile
225                 230                 235                 240
Asp Ala Ile Lys Ala Gly Leu Asp Leu Glu Met Pro Gly Val Ser Arg
                245                 250                 255
```

```
Tyr Arg Gly Lys Tyr Ile Glu Ser Ala Leu Gln Ala Arg Leu Leu Lys
        260             265                 270
Gln Ser Thr Ile Asp Glu Arg Ala Arg Arg Val Leu Arg Phe Ala Gln
        275             280                 285
Lys Ala Ser His Leu Lys Val Ser Glu Val Glu Gln Gly Arg Asp Phe
    290                 295                 300
Pro Glu Asp Arg Val Leu Asn Arg Gln Ile Cys Gly Ser Ser Ile Val
305                 310                 315                 320
Leu Leu Lys Asn Glu Asn Ser Ile Leu Pro Leu Pro Lys Ser Val Lys
                325                 330                 335
Lys Val Ala Leu Val Gly Ser His Val Arg Leu Pro Ala Ile Ser Gly
                340                 345                 350
Gly Gly Ser Ala Ser Leu Val Pro Tyr Tyr Ala Ile Ser Leu Tyr Asp
            355                 360                 365
Ala Val Ser Glu Val Leu Ala Gly Ala Thr Ile Thr His Glu Val Gly
    370                 375                 380
Ala Tyr Ala His Gln Met Leu Pro Val Ile Asp Ala Met Ile Ser Asn
385                 390                 395                 400
Ala Val Ile His Phe Tyr Asn Asp Pro Ile Asp Val Lys Asp Arg Lys
                405                 410                 415
Leu Leu Gly Ser Glu Asn Val Ser Ser Thr Ser Phe Gln Leu Met Asp
                420                 425                 430
Tyr Asn Asn Ile Pro Thr Leu Asn Lys Ala Met Phe Trp Gly Thr Leu
        435                 440                 445
Val Gly Glu Phe Ile Pro Thr Ala Thr Gly Ile Trp Glu Phe Gly Leu
    450                 455                 460
Ser Val Phe Gly Thr Ala Asp Leu Tyr Ile Asp Asn Glu Leu Val Ile
465                 470                 475                 480
Glu Asn Thr Thr His Gln Thr Arg Gly Thr Ala Phe Phe Gly Lys Gly
                485                 490                 495
Thr Thr Glu Lys Val Ala Thr Arg Arg Met Val Ala Gly Ser Thr Tyr
            500                 505                 510
Lys Leu Arg Leu Glu Phe Gly Ser Ala Asn Thr Thr Lys Met Glu Thr
        515                 520                 525
Thr Gly Val Val Asn Phe Gly Gly Gly Ala Val His Leu Gly Ala Cys
    530                 535                 540
Leu Lys Val Asp Pro Gln Glu Met Ile Ala Arg Ala Val Lys Ala Ala
545                 550                 555                 560
Ala Asp Ala Asp Tyr Thr Ile Ile Cys Thr Gly Leu Ser Gly Glu Trp
                565                 570                 575
Glu Ser Glu Gly Phe Asp Arg Pro His Met Asp Leu Pro Pro Gly Val
            580                 585                 590
Asp Thr Met Ile Ser Gln Val Leu Asp Ala Ala Pro Asn Ala Val Val
        595                 600                 605
Val Asn Gln Ser Gly Thr Pro Val Thr Met Ser Trp Ala His Lys Ala
    610                 615                 620
Lys Ala Ile Val Gln Ala Trp Tyr Gly Gly Asn Glu Thr Gly His Gly
625                 630                 635                 640
Ile Ser Asp Val Leu Phe Gly Asn Val Asn Pro Ser Gly Lys Leu Ser
                645                 650                 655
Leu Ser Trp Pro Val Asp Val Lys His Asn Pro Ala Tyr Leu Asn Tyr
            660                 665                 670
Ala Ser Val Gly Gly Arg Val Leu Tyr Gly Glu Asp Val Tyr Val Gly
            675                 680                 685
Tyr Lys Phe Tyr Asp Lys Thr Glu Arg Glu Val Leu Phe Pro Phe Gly
        690                 695                 700
His Gly Leu Ser Tyr Ala Thr Phe Lys Leu Pro Asp Ser Thr Val Arg
```

```
705                    710                    715                    720
Thr Val Pro Glu Thr Phe His Pro Asp Gln Pro Thr Val Ala Ile Val
                    725                    730                    735
Lys Ile Lys Asn Thr Ser Ser Val Pro Gly Ala Gln Val Leu Gln Leu
                740                    745                    750
Tyr Ile Ser Ala Pro Asn Ser Pro Thr His Arg Pro Val Lys Glu Leu
            755                    760                    765
His Gly Phe Glu Lys Val Tyr Leu Glu Ala Gly Glu Glu Lys Glu Val
        770                    775                    780
Gln Ile Pro Ile Asp Gln Tyr Ala Thr Ser Phe Trp Asp Glu Ile Glu
785                    790                    795                    800
Ser Met Trp Lys Ser Glu Arg Gly Ile Tyr Asp Val Leu Val Gly Phe
                    805                    810                    815
Ser Ser Gln Glu Ile Ser Gly Lys Gly Lys Leu Ile Val Pro Glu Thr
                820                    825                    830
Arg Phe Trp Met Gly Leu
                835


<210> 3
<211> 2517
<212> DNA
<213> Trichoderma reesei

<400> 3
atgggcgaat ggcaggagca gatgatgggt tttgacgtgg aggatgttct gtctcagctg      60
agccaaaatg agaagattgc tctcttgtcc ggcattgatt tctggcatac ttatcccata     120
ccaaagtaca acgtcccttc agtccgccta acggacggtc ctaacggcat acgaggcaca     180
aagttttttg ctggcattcc tgctgcctgc ctgccatgtg ggacggccct ggcctctacc     240
tgggataagc agctgctgaa gaaggctggg aagctgctcg gtgatgagtg catcgcaaaa     300
ggcgcccact gctggctggg cccaacaatc aatactcccc gatctcctct ggggggggcgc     360
ggcttcgagt cattttcgga agatccgtac ctgtccggca tccttgctgc atctatgatt     420
ctcggctgtg aaagcacagg tgtcatctct gccgtcaaac actttgtcgc caacgaccag     480
gagcacgagc ggcgagcggt cgactgtctc atcacccagc gggctctccg ggaggtctat     540
ctgcgaccct ccagatcgt agcccgagat gcaaggcccg gcgcattgat gacatcctac     600
aacaaggtca atggcaagca cgtcgctgac agcgccgagt tccttcaggg cattctccgg     660
actgagtgga attgggatcc tctcattgtc agcgactggt acggcaccta caccactatt     720
gatgccatca aagccggcct tgatctcgag atgccgggcg tttcacgata tcgcggcaaa     780
tacatcgagt ctgctctgca ggcccgtttg ctgaagcagt ccactatcga tgagcgcgct     840
cgccgcgtgc tcaggttcgc ccagaaggcc agccatctca aggtctccga ggtagagcaa     900
ggccgtgact ccccagagga tcgcgtcctc aaccgtcaga tctgcggcag cagcattgtc     960
ctactgaaga atgagaactc catcttacct ctccccaagt ccgtcaagaa ggtcgccctt    1020
gttggatccc acgtgcgtct accggctatc tcgggaggag gcagcgcctc tcttgtccct    1080
tactatgcca tatctctata cgatgccgtc tctgaggtac tagccggtgc cacgatcacg    1140
cacgaggtcg gtgcctatgc ccaccaaatg ctgcccgtca tcgacgcaat gatcagcaac    1200
gccgtaatcc acttctacaa cgaccccatc gatgtcaaag acagaaagct ccttggcagt    1260
gagaacgtat cgtcgacatc gttccagctc atggattaca caacatccc aacgctcaac    1320
aaggccatgt tctgggtac tctcgtgggc gagtttatcc ctaccgccac gggaatttgg    1380
gaatttggcc tcagtgtctt tggcactgcc gacctttata ttgataatga gctcgtgatt    1440
gaaaatacaa cacatcagac gcgtggtacc gcctttttcg gaaagggaac gacggaaaaa    1500
gtcgctacca ggaggatggt ggccggcagc acctacaagc tgcgtctcga gtttgggtct    1560
gccaacacga ccaagatgga gacgaccggt gttgtcaact tggcggcgg tgccgtacac    1620
ctgggtgcct gtctcaaggt cgacccacag gagatgattg cgcgggccgt caaggccgca    1680
gccgatgccg actacaccat catctgcacg ggactcagcg gcgagtggga gtctgagggt    1740
tttgaccggc ctcacatgga cctgccccct ggtgtggaca ccatgatctc gcaagttctt    1800
gacgccgctc ccaatgctgt agtcgtcaac cagtcaggca ccccagtgac aatgagctgg    1860
gctcataaag caaaggccat gtgcaggct tggtatggtg gtaacgagac aggccacgga    1920
atctccgatg tgctctttgg caacgtcaac ccgtcgggga aactctccct atcgtggcca    1980
```

```
gtcgatgtga agcacaaccc agcatatctc aactacgcca gcgttggtgg acgggtcttg    2040
tatggcgagg atgtttacgt tggctacaag ttctacgaca aaacggagag ggaggttctg    2100
tttcctttg ggcatggcct gtcttacgct accttcaagc tcccagattc taccgtgagg    2160
acggtccccg aaaccttcca cccggaccag cccacagtag ccattgtcaa gatcaagaac    2220
acgagcagtg tcccgggcgc ccaggtcctg cagctataca tttcggcccc aaactcgcct    2280
acacatcgcc cggtcaagga gctgcacgga ttcgaaaagg tgtatcttga agctggcgag    2340
gagaaggagg tacaaatacc cattgaccag tacgctacta gcttctggga cgagattgag    2400
agcatgtgga agagcgagag gggcatttat gatgtgcttg taggattctc gagtcaggaa    2460
atctcgggca aggggaagct gattgtgcct gaaacgcgat ctggatgggg ctgtag       2517
```

<210> 4
<211> 831
<212> PRT
<213> Trichoderma reesei

<400> 4
```
Met Met Gly Phe Asp Val Glu Asp Val Leu Ser Gln Leu Ser Gln Asn
 1               5                   10                  15
Glu Lys Ile Ala Leu Leu Ser Gly Ile Asp Phe Trp His Thr Tyr Pro
            20                  25                  30
Ile Pro Lys Tyr Asn Val Pro Ser Val Arg Leu Thr Asp Gly Pro Asn
        35                  40                  45
Gly Ile Arg Gly Thr Lys Phe Phe Ala Gly Ile Pro Ala Ala Cys Leu
    50                  55                  60
Pro Cys Gly Thr Ala Leu Ala Ser Thr Trp Asp Lys Gln Leu Leu Lys
65                  70                  75                  80
Lys Ala Gly Lys Leu Leu Gly Asp Glu Cys Ile Ala Lys Gly Ala His
                85                  90                  95
Cys Trp Leu Gly Pro Thr Ile Asn Thr Pro Arg Ser Pro Leu Gly Gly
            100                 105                 110
Arg Gly Phe Glu Ser Phe Ser Glu Asp Pro Tyr Leu Ser Gly Ile Leu
        115                 120                 125
Ala Ala Ser Met Ile Leu Gly Cys Glu Ser Thr Gly Val Ile Ser Ala
130                 135                 140
Val Lys His Phe Val Ala Asn Asp Gln Glu His Glu Arg Arg Ala Val
145                 150                 155                 160
Asp Cys Leu Ile Thr Gln Arg Ala Leu Arg Glu Val Tyr Leu Arg Pro
                165                 170                 175
Phe Gln Ile Val Ala Arg Asp Ala Arg Pro Gly Ala Leu Met Thr Ser
            180                 185                 190
Tyr Asn Lys Val Asn Gly Lys His Val Ala Asp Ser Ala Glu Phe Leu
        195                 200                 205
Gln Gly Ile Leu Arg Thr Glu Trp Asn Trp Asp Pro Leu Ile Val Ser
210                 215                 220
Asp Trp Tyr Gly Thr Tyr Thr Thr Ile Asp Ala Ile Lys Ala Gly Leu
225                 230                 235                 240
Asp Leu Glu Met Pro Gly Val Ser Arg Tyr Arg Gly Lys Tyr Ile Glu
                245                 250                 255
Ser Ala Leu Gln Ala Arg Leu Leu Lys Gln Ser Thr Ile Asp Glu Arg
            260                 265                 270
Ala Arg Arg Val Leu Arg Phe Ala Gln Lys Ala Ser His Leu Lys Val
        275                 280                 285
Ser Glu Val Glu Gln Gly Arg Asp Phe Pro Glu Asp Arg Val Leu Asn
    290                 295                 300
Arg Gln Ile Cys Gly Ser Ser Ile Val Leu Leu Lys Asn Glu Asn Ser
305                 310                 315                 320
Ile Leu Pro Leu Pro Lys Ser Val Lys Lys Val Ala Leu Val Gly Ser
```

```
                    325                     330                     335
His Val Arg Leu Pro Ala Ile Ser Gly Gly Gly Ser Ala Ser Leu Val
            340                     345                     350
Pro Tyr Tyr Ala Ile Ser Leu Tyr Asp Ala Val Ser Glu Val Leu Ala
            355                     360                     365
Gly Ala Thr Ile Thr His Glu Val Gly Ala Tyr Ala His Gln Met Leu
        370                     375                     380
Pro Val Ile Asp Ala Met Ile Ser Asn Ala Val Ile His Phe Tyr Asn
    385                     390                     395                     400
Asp Pro Ile Asp Val Lys Asp Arg Lys Leu Leu Gly Ser Glu Asn Val
                    405                     410                     415
Ser Ser Thr Ser Phe Gln Leu Met Asp Tyr Asn Asn Ile Pro Thr Leu
                420                     425                     430
Asn Lys Ala Met Phe Trp Gly Thr Leu Val Gly Glu Phe Ile Pro Thr
            435                     440                     445
Ala Thr Gly Ile Trp Glu Phe Gly Leu Ser Val Phe Gly Thr Ala Asp
        450                     455                     460
Leu Tyr Ile Asp Asn Glu Leu Val Ile Glu Asn Thr Thr His Gln Thr
    465                     470                     475                     480
Arg Gly Thr Ala Phe Phe Gly Lys Gly Thr Thr Glu Lys Val Ala Thr
                    485                     490                     495
Arg Arg Met Val Ala Gly Ser Thr Tyr Lys Leu Arg Leu Glu Phe Gly
                500                     505                     510
Ser Ala Asn Thr Thr Lys Met Glu Thr Thr Gly Val Val Asn Phe Gly
            515                     520                     525
Gly Gly Ala Val His Leu Gly Ala Cys Leu Lys Val Asp Pro Gln Glu
        530                     535                     540
Met Ile Ala Arg Ala Val Lys Ala Ala Ala Asp Ala Asp Tyr Thr Ile
    545                     550                     555                     560
Ile Cys Thr Gly Leu Ser Gly Glu Trp Glu Ser Glu Gly Phe Asp Arg
                565                     570                     575
Pro His Met Asp Leu Pro Pro Gly Val Asp Thr Met Ile Ser Gln Val
            580                     585                     590
Leu Asp Ala Ala Pro Asn Ala Val Val Val Asn Gln Ser Gly Thr Pro
        595                     600                     605
Val Thr Met Ser Trp Ala His Lys Ala Lys Ala Ile Val Gln Ala Trp
    610                     615                     620
Tyr Gly Gly Asn Glu Thr Gly His Gly Ile Ser Asp Val Leu Phe Gly
    625                     630                     635                     640
Asn Val Asn Pro Ser Gly Lys Leu Ser Leu Ser Trp Pro Val Asp Val
                645                     650                     655
Lys His Asn Pro Ala Tyr Leu Asn Tyr Ala Ser Val Gly Gly Arg Val
            660                     665                     670
Leu Tyr Gly Glu Asp Val Tyr Val Gly Tyr Lys Phe Tyr Asp Lys Thr
            675                     680                     685
Glu Arg Glu Val Leu Phe Pro Phe Gly His Gly Leu Ser Tyr Ala Thr
        690                     695                     700
Phe Lys Leu Pro Asp Ser Thr Val Arg Thr Val Pro Glu Thr Phe His
    705                     710                     715                     720
Pro Asp Gln Pro Thr Val Ala Ile Val Lys Ile Lys Asn Thr Ser Ser
                725                     730                     735
Val Pro Gly Ala Gln Val Leu Gln Leu Tyr Ile Ser Ala Pro Asn Ser
            740                     745                     750
Pro Thr His Arg Pro Val Lys Glu Leu His Gly Phe Glu Lys Val Tyr
            755                     760                     765
Leu Glu Ala Gly Glu Glu Lys Glu Val Gln Ile Pro Ile Asp Gln Tyr
        770                     775                     780
```

```
Ala Thr Ser Phe Trp Asp Glu Ile Glu Ser Met Trp Lys Ser Glu Arg
785                 790             795                 800
Gly Ile Tyr Asp Val Leu Val Gly Phe Ser Ser Gln Glu Ile Ser Gly
                805             810                 815
Lys Gly Lys Leu Ile Val Pro Glu Thr Arg Phe Trp Met Gly Leu
            820             825                 830
```